

National Canners Association

WASHINGTON, D. C.

Information
Letter



For N. C. A.
Members

Membership Letter No. 61.

April 26, 1924.

Still They Come!

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Still They Come!

Not only the Board of Directors, but other member canners as well, are intensely in earnest on the membership campaign. The result is that many applications are being received. The work among members is gaining impetus, and will result in quite an enlarged membership by the time the Board of Directors meets on May 28.

Preventing the Development of Discoloration in Canned Corn.

Experimental work conducted by Dr. G.S. Bohart of the N.C.A. Research Laboratory has established the chemical fact that special enamels carrying small quantities of zinc oxide, when applied to corn cans, will effectively prevent the development of discoloration.

Several coatings which accomplish the desired result have been described in an N.C.A. circular, No. 10-L, together with information regarding their use, with the hope that can makers will study these and similar coatings and work out their practical application in the manufacture of cans.

In the meantime, the Research Laboratory will continue its study of this subject with the object of developing still better coatings than those already prepared.

Pending Legislation of Interest to Canners.

Senator Ernst and Representative Lampert have introduced similar bills, Senate No. 2679 and H.R. No. 8637, relating to trade marks. These bills have been referred to the Committees on Patents.

The bills provide methods for registering trade marks, prescribe what may be registered, and the effect of such registration. They also provide that the Commissioner shall keep a register of all trade marks reported to him by the international bureaus provided for by the International Trade Mark Convention of August 20, 1910, and for the registration of the export marks used by manufacturers and exporters in the United States.

The House Committee on Post Offices and Post Roads has favorably reported Senate Bill No. 2111, which authorizes the Postmaster General to conduct certain experiments to encourage the transportation directly from producers to consumers or vendors. The purpose of the bill is to bring the producer of agricultural products in closer contact with the consumer and furnish an outlet for agricultural products which are now being wasted or lost for want of adequate facilities of transporting them in small quantities.

Canned Tomatoes Not at Fault.

The death of a young man in New England was attributed to eating canned tomatoes, according to a newspaper report. On investigation by this Association, it was found that there was disagreement among the three doctors who attended this case as to the exact cause of the illness, but a signed statement of the physician who performed the operation on the deceased showed that the patient had an acute case of appendicitis. The death certificate shows death was caused by appendicitis complicated with rupture of the appendix.

The Association intends to follow this matter up with the physicians who diagnosed the case as "ptomaine poisoning."

Canned Salmon Wrongly Blamed for Illness.

The attention of the National Cannery Association was recently called to a case of illness attributed to canned salmon. Upon investigation it was found that the woman's illness was due to an overdose of headache powder and we have a signed statement from the superintendent of the hospital where she was cared for to the effect that her illness had no relation whatever to the consumption of canned food.

Hearing of Interest to Preservers.

As several of our members are manufacturers of preserves, jams, and jellies, the National Cannery Association sent a representative to attend the hearing held by the Bureau of Chemistry on April 16, to consider the question of labeling preserves, jams, and jellies, prepared in part from pectin and apple base.

Special attention was given to standards and forms of labeling proposed for such products by the National Preservers and Fruit Products Association.

The hearing was well attended and an announcement of the Bureau's decision is expected in due course.

Vitamins in Canned ~~Food~~

The results to date of the cooperative vitamin studies conducted by Doctor Eddy of Columbia University and Doctor Kohman of the Research Laboratory of the National Cannery Association were reported this week before the meeting of the American Chemical Society being held in Washington, D.C.

The first paper was reported by Doctor Kohman and may be summarized as follows:

An experiment was planned to determine the nature of the factors which cause vitamin destruction and to find a method to prevent such

destruction. Apples were chosen for this experiment because studies on the nature of corrosion in canned fruits gave some suggestive leads for such a study. The choice was a happy one, for the experiment yielded the following striking results:

1. When normal apples are peeled and quartered and then canned without preliminary treatment, or when apples are baked or home made apple sauce is prepared, the Vitamin C is practically all destroyed.

2. A method of canning apples has been discovered by which practically no Vitamin C is destroyed and this is true whether the cook is 5 minutes or 30 minutes in a No. 2 can.

3. This method also prevents discoloration of the apples, protects them against corrosion of the can, i.e., prevents tin and iron solution in a plain can and perforations and hydrogen formation in enameled cans.

4. This method is very practical for apples and it is believed that the fundamental principles involved are applicable to other fruits, but this must be checked by further experimentation.

5. Apples are not as rich in Vitamin C as many fruits, and it should not be concluded that other fruits, canned as they are now, are as poor in Vitamin C as apples canned by the same method.

6. In cold storage, apples gradually deteriorate in Vitamin C content. Apples canned by this method at the time when they normally go into cold storage are richer in Vitamin C three or four months later than similar apples held in cold storage during that time. Apples canned for nine months indicated that there was no appreciable loss of Vitamin C due to storage after canning. Longer periods of storage have not yet been studied.

7. The method applied to apples is as follows: The apples are peeled and quartered and held over night at ordinary temperatures, covered with a weak salt solution (8 to 16 lbs. per 100 gal.). The salt in the water prevents the apples from darkening. The next morning, the apples are ready for canning in the usual way. The salt water is drained off, the apples are filled into the cans and covered with boiling water, and the cans are then passed through the hot exhaust box, after which the cans are closed and processed.

8. All fruits contain more or less oxygen. In apples, this amounts to about 5 per cent. of their volume. Moreover, all fruits continually use oxygen in a respiratory process not unlike respiration in animals. When their supply of atmospheric oxygen is cut off, as by holding under water or salt solution, they utilize the oxygen within their tissue until it is completely exhausted. As Vitamin C is very sensitive to oxidation, removal of oxygen is essential to its preservation.

9. The removal of oxygen by means of a vacuum pump only partially protected Vitamin C in canning apples, even though this was done in a very efficient manner. Therefore, it is believed that apples contain oxygen in a combined form somewhat analogous to the oxygen held in the blood of animals as oxyhaemoglobin. It is well known that men can survive several minutes under water utilizing the reserve supply of oxygen in his blood.

10. A considerable proportion of commercially canned apples is now packed by the method as above outlined. Oxygen has been found to be the primary cause of corrosion of the can by the fruit and also of darkening the .

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apples during processing and its elimination is necessary for these reasons.

11. The holding of other fruits under water for a shorter or longer time previous to canning is being practiced more and more. In one type of canning factory, the fruit is distributed or carried from the stemming or sorting operation to the graders, thence to the filling tables or basins, in troughs of water. After pears are peeled, it is customary to cover them with a dilute salt solution to prevent darkening. It has been found that cherries pit better if held for a few hours at least under cool water. Moreover, this is a means of floating out sticks and defective fruit.

12. Finally, all canned fruits are passed through an exhaust box before the cans are closed and processed. When the temperature is thus raised, the respiratory processes are hastened, as is the case with chemical reactions in general. However, this holds true only up to a certain temperature, about 130° F., when the enzymic processes are destroyed. By lowering the temperature of the exhaust box and extending the time of exhausting, this respiratory process in fruits may be utilized to eliminate oxygen, both combined and free, to a very efficient degree. The practical application of these laboratory findings is being further studied.

The second paper was reported by Doctor Eddy, and embodies the following conclusions:

1. Canned spinach, nine months after canning, has proven to be one of the richest sources of Vitamin C yet found, ranking with fresh orange juice in this respect. This is true whether the process was 70 minutes or 120 minutes at 240° F. in No. 2½ cans.

2. Canned spinach, nine months after canning, has proven to be richer in Vitamin A than any substance yet found, with one exception--cod liver oil. It is richer in this respect than butter fat and this is true whether the spinach was processed 70 minutes or 120 minutes at 240° F. in No. 2½ cans.

The results go a long way towards substantiating the working hypothesis formulated in our vitamin bulletin two years ago, and reported before the American Chemical Society in the fall of 1922 by Doctor Kohman. This hypothesis may be summarized as follows:

1. Fruits and possibly vegetables become richer in vitamins up to a certain stage of maturity, in the case of fruits up to the proper stage of ripeness.

2. Raw fruits and vegetables deteriorate in their vitamin content in subsequent storage.

3. The canning process stops all bacterial and enzymic activity, the latter of which is undoubtedly involved in vitamin deterioration, and therefore the canning process stops such deterioration.

4. It is possible to can fruits and vegetables, if proper conditions are observed, without any practical injury to the vitamin content.

5. If fruits and vegetables are canned under proper conditions at the peak of their vitamin content, canned foods should be rich in vitamins and be a means of preserving them for a long time.

6. Since many fruits are harvested in an immature state, to ripen in transit, since both fruits and vegetables are commonly held for considerable time before reaching the consumer, and since the housewife is unable to put in

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practice certain principles which are possible in commercial canning to prevent vitamin destruction, it may well be that commercially canned foods are frequently richer in vitamins than the same item home cooked or home canned, or even in the raw state.

Our apple experiment summarized above goes a long way to prove these six points, and it is substantiated by the work on canned cabbage and spinach. It is planned to continue similar investigations with other products.

American Canned Foods Stand Quality Test.

R.S.Hollingshead, Canned Foods Specialist, writes in Commerce Reports as follows:

"For many years, canned fruits, largely the products of California factories, have been exported to all parts of the world, and have successfully met foreign competition on the quality basis. In no other country has this branch of the industry been carried on with such careful attention to the selection of the stock, excellence of workmanship, and close supervision of the technical details necessary to secure the sterility and appearance of the product. To maintain these standards of quality, and as a result of high duties in many consuming countries, it is necessary that the selling price be somewhat high. In many foreign markets these products are considered luxuries and are sold only to people possessing a comparatively high purchasing power. The marked decrease in the exports of canned fruits--amounting to 28 per cent., based on the 1922 exports--can be attributed partially to the reduced purchasing power for luxury goods abroad, and partially to the well-sustained consuming power of the domestic markets. The decrease in exports of canned fruit is the only adverse phase of the export trade in canned foods, all the other classes showing gains.

"Exports of canned vegetables have been quite gratifying and point to still brighter prospects for the future. There was quite a large decrease (27 per cent.) in the exports of canned beans, and a smaller decrease in canned tomatoes, but much more than offsetting these are the increases in canned soup (17 per cent.), canned peas (53 per cent.), canned corn (11 per cent.), and canned asparagus (28 per cent.). The increases in the exports of canned soups are largely due to the activity of one manufacturer in making a foreign market for a previously unknown product. The increase in the exports of canned peas is particularly favorable at this time, for the peck, according to the figures of the National Cannery Association, is the largest in the history of the industry. Domestic prices have held up throughout the year, which may be attributed, at least in part, to the foreign demand. The generally high standard of quality of this product has also helped in the export trade.

"England, Canada, Cuba, and Mexico are the largest consumers of our canned foods at the present time, although there is a very large potential market in Latin America. Under the existing tariffs in many countries, however, large exports to them are impossible, as the necessary retail price places the products out of reach of the vast majority of the consuming public."

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